

- Bill of Material and Tower Punch List
- EMM for non-coded materials
- Design Review drawings at 60% and 95% complete to include Structure Data Sheets (SDS), Plan & Profile Drawings (P&P)
- PLS-CADD Plan & Profile Drawings
- Tension Check Report for affected spans
- Issue complete design package – IFC Drawings
- Issue construction design package including: Plan & Profile, Structure Data Sheets, and Job Walkdown Notes
- Responsible Engineer Construction Support
- As-built drawings

5.0 CONTRACTOR'S USE OF PG&E PROPERTY

5.1 All records, reports, computer programs, Documentation, written procedures and similar materials, documents or data, in whatever form, provided by PG&E for Contractor's use in the performance of services under this Contract shall remain the confidential property of PG&E and shall be returned to PG&E immediately upon completion of the Contractor's use for the performance of the Work, or earlier upon the request of PG&E.

5.2 Contractor shall implement documented information security controls to maintain the confidentiality, integrity and availability of PG&E's electronic information and network. These controls include such areas as user access, authentication and password administration; secure network connectivity; electronic control, storage, disposal and transmission of data; security incident reporting and network monitoring to assure compliance. The requirements of this Paragraph shall be extended to Sub suppliers performing activities on Contractor's behalf. These requirements are applicable when connecting to or accessing PG&E's network, protecting PG&E information, or introducing products and services, such as computer programs, code, software, firmware or media, into PG&E's network. Contractor provides PG&E the rights of access for the purpose of verifying these controls at the Contractor's facility. Contractor shall submit its documented controls to PG&E for review upon request. Contractor may utilize PG&E's Information Protection Program in lieu of its documented controls upon request to PG&E.

6.0 MODIFICATION TO EXISTING SERVICES AND WORK STATUS REPORTS

6.1 Additional Services other than those described in this Contract shall be performed by Contractor only if described and authorized in a Contract Change Order(CCO) signed by Contractor and PG&E. Additional work may be requested by PG&E's Work Supervisor. Any Additional work

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must be authorized in writing by PG&E prior to performance of such additional work, through the issuance of a fully executed Contract Change Order. CCO's which are written pursuant to the Contract and which have completion dates beyond the completion date of the Contract shall continue to be governed by the terms of the Contract until said CCO's completion date.

6.2 PG&E reserves the right to make such changes in work, specifications, or level of effort, as may be necessary or desirable and any difference in Contract price resulting from such changes shall be approved in writing by PG&E before the work is begun.

6.3 Contractor shall on a monthly basis prepare a summary of the work performed for PG&E. Such a summary shall be given to the PG&E Work Supervisor and shall include the following information, at a minimum, with regard to the status of Work:

6.3.1 PROGRESS. Work performed or completed by Contractor, including significant progress, set-backs, or outstanding issues, for example, permitting, regulatory or PG&E approval.

6.3.2 CHANGES. Changes, additions or decreases, to the scope of Work.

6.3.3 SCHEDULE. Review of the schedule for the Work as compared to actual progress.

6.4 Contractor shall immediately notify the PG&E Work Supervisor regarding any problems which may significantly affect the performance of Services by Contractor.

6.5 PG&E shall decide, in its reasonable discretion, whether Contractor's performance during the Contract term is satisfactory.

7.0 WORK LOCATION.

Services may be performed at Contractor's place of business and in various locations throughout the Pacific Gas and Electric Company service territory, as required for successful completion of the work described in Section 4, Scope of Work and Deliverables.

8.0 CONTRACT FEE SCHEDULE AND INVOICES

8.1 All services will be provided at a Lump Sum of [REDACTED]. Contractor is only paid for time actually spent on this project. All travel and project related expenses will be billed in accordance with the MSA.

8.2 Contractors invoices shall be submitted to the PG&E Work Supervisor at the address listed in Section 10, Contract Interface.

9.0 NOTIFICATION Contractor shall immediately notify PG&E regarding any problems which may significantly affect performance of Services by immediately notifying PG&E's Work Supervisor.

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10.0 CONTRACT INTERFACE

In regard to matters relating to this Contract, both parties shall deliver written notices to:

PG&E Work Supervisor	Work Supervisor (Contact)
Raymond Hom 925-328-5364 Raymond.Hom@pge.com	Steve Casteel scasteel@burnsmcd.com

11.0 CHANGE CONTROL

11.1 Changes or modifications to this Contract may not occur except by a written change order signed by the Contractor's and PG&E's authorized representatives.

11.2 CONTRACTOR AGREES THAT ALL COSTS FOR ANY SUCH MODIFICATION OR CHANGE THAT IS PERFORMED WITHOUT PG&E'S PRIOR WRITTEN APPROVAL SHALL BE AT CONTRACTOR'S SOLE RISK AND EXPENSE.

12 ACCEPTANCE

12.1 PG&E will indicate its acceptance of each Deliverable in writing and forward such written acceptance to Contractor. In the event PG&E rejects a Deliverable, Contractor will address PG&E's reasons for such rejection and resubmit the Deliverable to PG&E for acceptance at no additional charge.

13.0 CONFLICTS BETWEEN TERMS

13.1 Contractor shall immediately notify PG&E Work Supervisor of any conflicts or potential conflicts.

Project Management Plan Waves 14, 15, 16 and 20

Disregard references to Waves 17, 18 and 19, work to be done by others.

1. PROJECT SUMMARY

Burns & McDonnell (BMCD) has received a request for proposal for the NERC Priority II Assessment Mitigation Engineering, Group Waves 14-20 Projects consisting of 24 transmission projects with 525 miles and 4,176 spans of 230kV and 115kV voltage classes located in various regions in PG&E's transmission territory. Through the assessment process, a total of 642 discrepancies were identified throughout the included circuits.

Group Wave #	Proj Title #	Circuit Name	PGE Job Order #	Circuit #
14	W14-1	Caribou-Table Mountain 230kV	30951931	20013
	W14-2	Paradise-Table Mountain 115kV	30970621	10400
	W14-3	Caribou-Palermo 115kV	30898386	10391
	W14-4	Palermo-Wyandotte 115kV	30977380	10385
15	W15-1	El Dorado-Missouri Flat #1 115kV	30940862	10067
	W15-2	Rio Oso-Nicolaus 115kV	30932676	10278
16	W16-1	Eagle Rock-Cortina 115kV	30932643	10061
	W16-2	Eagle Rock-Redbud 115kV	30932644	10062
	W16-3	Ignacio-Mare Island #1 115kV	30901383	10107
	W16-4	Ignacio-Mare Island #2 115kV	30901383	10108
	W16-5	Ignacio-San Rafael #1 115kV	30901384	10109
17	W17-1	Mesa-Sisquoc 115kV	30945437	10173
	W17-2	Moss Landing-Green Valley #1 & #2 115kV	30956768	10213/
	W17-3	Moss Landing-Salinas #1 & #2 115kV	30993367	10216/ 10217
	W17-4	Moss Landing-Salinas-Soledad #1 & #2 115kV	30932663	10218/ 10219
18	W18-1	Kings River-Sanger-Reedley 115kV	30932651	10129
	W18-2	Oakhurst Tap 115kV	30932667	10033B
19	W19-1	Moraga-Lakewood 115kV	30950803	10420
	W19-2	Moraga-Oakland "J" 115kV	30932659	10204
	W19-3	Moraga-San Leandro #1 115kV	30932660	10205
	W19-4	Moraga-San Leandro #2 115kV	30932660	10206
	W19-5	Moraga-San Leandro #3 115kV	30932661	10207
20	W20-1	Vaca-Vacaville-Cordelia 115kV	30932709	10347
	W20-2	Vaca-Vacaville-Jameson-North Tower 115kV	30932710	10348

Project Management Plan & Project Specific Clarifications

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BMcD has worked with PG&E to resolve NERC Priority I Assessment Mitigation and is working on NERC Alert Priority II Assessment Mitigation Engineering Projects (75 projects awarded to date). BMcD is well positioned and prepared to provide these services for this next phase to meet NERC requirements. This proposal provides PG&E with the costs and schedules for the engineering and design required to mitigate these discrepancies. BMcD will work with PG&E to meet PG&E milestones and adhere to NERC's recommended milestones.

2. PROJECT ADMINISTRATION

Burns & McDonnell will oversee and manage the engineering process to ensure that PG&E's needs and objectives are met throughout the project duration. As a part of this process, Burns & McDonnell has included the following administrative services:

a. Project Management

The circuits will be divided among three project teams. Each project team will be led by a Project Manager and the Project Manager will be responsible for managing the scope of work for each of the projects/circuits assigned to their team. They will monitor and report on project status, schedules and costs throughout the project. The Project Managers will be responsible for the completion of BMcD's engineering services as scheduled and will expedite, if necessary, in order to maintain the agreed upon project schedules.

b. Meetings & Teleconference Calls

The Project Manager will also be responsible for scheduling, coordinating, and participating in meetings, walkdowns, reviews and teleconference calls as needed with PG&E personnel.

c. Reporting

The Project Manager will provide monthly project progress and status reporting to PG&E.

d. Project Resources

Burns & McDonnell will assign and maintain a qualified staff to the project for performance of these engineering services.

e. Quality Assurance & Control

Burns & McDonnell will maintain and execute a quality assurance and control (QA/QC) program for project deliverables.

An overview of the BMcD QA/QC program is included in the "Section 9 – QA/QC Program".

Project Management Plan & Project Specific Clarifications

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3. PROJECT TEAM

Burns & McDonnell has provided an organizational chart that identifies the Project Team and individual roles.

See "Section 5 - Team and Resumes" of this Proposal for the organizational chart and the project team resumes.

4. PROJECT APPROACH

a. Description

PG&E has requested Burns & McDonnell to provide a proposal for engineering services to include detailed scope, engineering design, associated equipment and material market price information to enable PG&E to make informed decisions about its NERC upgrades and modification plans. This proposal will address the non-compliant spans with known clearances discrepancies identified in the NERC Priority II Assessment for the 24 projects in this RFP. This work will require structure raises and/or replacements, depending on the feasibility of distribution modifications, where applicable. The location and non-compliance summary details are described in the Pricing Spreadsheet provided by PG&E. Any distribution modifications will be completed by PG&E.

b. BMCD Scope of Work

Burns & McDonnell proposes the following tasks for facilitating the project described above for all the circuits identified in this RFP.

- BMCD will act as the Project Engineer from the project initiation through design completion. Responsibilities include:
 - Resolve all technical design issues
 - Schedule meetings
 - Seek information from other internal PG&E departments
 - Discuss design with construction and land departments
 - Maintain communication with the assigned PG&E Engineering contact, the Project Manager, and the rest of the project team
 - Be available throughout the construction phase to answer questions and/or analyze any non-tower related field changes to the design
- Provide a schedule and cost flow by the third Friday of each month.
- Schedule and facilitate weekly teleconferences to discuss project status
- Contractor will conduct Walkdown of the proposed mitigation scope of work with the appropriate PG&E personnel, to update/revise and issue SOW.
- Generate a project scope document and update as needed.
- Hold a 30% Walkdown meeting with PG&E personnel to finalize the scope of work, review the 30% Engineering Design and conduct a Constructability Review.

Project Management Plan & Project Specific Clarifications

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- Conduct a 60% Walkdown of the proposed mitigation scope of work (SOW), with the appropriate PG&E personnel, to update/revise and issue a final SOW.
- Submit a 95% Design Review package and conduct a design review of the proposed mitigation (SOW) with the appropriate PG&E personnel.
- Update PLS-CADD Model based on project scope document.
- ***All designs will incorporate and comply with the Avian Clearance requirements in "Overhead Transmission Line Design Criteria – 068177". Our engineering team will work with PG&E Engineering and Land Departments to determine if any projects are in high-risk raptor areas.***
- Generate a Tension Check Report (actual vs. PG&E tension standards) for each span with a discrepancy. ***This analysis will identify segments of the line that currently exceed the tension criteria found in "Overhead Transmission Line Design Criteria – 068177".***
- Check recommended structure raises (Method 1 structures) to confirm the modification mitigates the clearance discrepancy at the proposed and adjacent tower locations.
- Model towers in PLS-Tower to evaluate loading on tower and proposed extensions.
- Tower reinforcement will be designed where needed to support design loads. Design drawings and fabrication details will be included.
- Provide punch-list detailing tower modifications.
- Provide foundation loads for PG&E-Civil to review.
- Create plan & profile drawings using PLS-CADD according to PG&E specifications to support the locations where the tower raise is required.
- Modify existing Structure Data Sheets to incorporate changes required to support the tower raises or other modifications as required. Updated stationing, span lengths, ruling spans, and line angles greater than one degree will be reflected on the structure data sheets.
- Provide bill of materials to PG&E for required hardware and assemblies (based on coordination with PG&E).
- Create EMM for non-coded items.
- Provide necessary drawings for CalTrans crossings to support PG&E permitting efforts (if applicable).
- Provide LAT/LONG coordinates and height of tower before and after modification for FAA evaluation. This data will be submitted with the 30% scope document and revised throughout the project if necessary.
- Issue IFC electronic notification and hard copies of the IFC package within 5 days after notification.
- Upload design files to PG&E's electronic library (ELS/WIP)
- BMcD shall make itself available throughout construction to answer questions and/or analyze any non-tower related field changes to the design.
- Provide as-built record drawings per construction field notes if submitted to Burns & McDonnell no more than 60 days after construction.

Project Management Plan & Project Specific Clarifications

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- Provide PLS-CADD .bak file.

c. PG&E Support

PG&E will perform the following tasks to support Burns & McDonnell:

- Acquire all permits necessary for the Project.
- Analyze and design foundations based loads submitted by BMCD.
- Provide unit costs and/or labor hours to be applied on Job Estimates
- Approve final package for construction.
- Procure all materials.
- Construction.
- Provide construction as-built notes from field.
- Provide training on uploading drawings into PG&E (ELS/WIP)

d. Project Assumptions

The following assumptions have been made while preparing the cost estimate and schedule included in this proposal:

- All NERC mitigated spans will be designed to meet PG&E's Design Criteria 068177 (dated 6/28/2013).
- Pricing of New Structure Design will include design activities related to tubular steel or wood structure type, excludes lattice steel structure types.
- PLS-CADD Method 1 structures will be used for line and structure modeling.
- PG&E will provide all staking or survey support needed.
- Land issues will be handled by PG&E.
- CalTrans crossing permit support and exhibit drawings only at locations where structures are adjacent to a CalTrans road.
- PG&E will be responsible for mitigating infractions at wood poles or wood pole equivalent structures.
- Methods of mitigating clearance infractions for evaluation by PG&E may include but is not limited to; re-tensioning, converting suspension towers to dead ends, plumbing insulators on adjacent spans and interset structures, converting suspension towers to flying (floating) dead ends. Grading changes are not the PG&E preferred method but may be considered where feasible.
- Any Change Requests (CRs) will be estimated based on the defined scope of work and schedule, and priced using our standard Rate Sheet, as defined in our current MSA (4400004292).

e. Project Deliverables

The following deliverables will be produced within the scope of this project:

30% Constructability Review

- Preliminary Work Scope document for affected spans
- Preliminary Job Walkdown Checklist/Notes
- Preliminary Tower List

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- Preliminary Material List
- Preliminary Job Estimate

60% Design Review

- Final Scope of Work document for affected spans
- Final Job Walkdown Notes
- Final Tower List
- Final Material List
- Final Job Estimate
- PLS-CADD Model
- TSP Requirement drawing (if needed)

95% Design Review

- Revised structure data sheets
- Plan & Profile drawings (generated from PLS-CADD)
- Stringing chart (if needed)
- Non-Standard tower extension and body modification drawings (if needed)
- F1004 Form (if line rating to be changed)

IFC Package

- Index Sheet
- Work Scope Document
- Material List
- Material reference drawings
- Job Walkdown Notes
- Structure data sheets
- Plan & Profile drawings
- Stringing Drawing (if needed)
- Tower modification drawings (if needed)
- Tower reference drawings
- Tower Weight Raise Sheet
- Foundation modification drawings (if directed by PG&E-Civil group)
- Foundation reference drawings
- Caltrans crossing permit support and exhibit drawings (where needed)
- EMM for non-coded materials
- Tension check report for affected spans
- PLS-CADD backup files and all other CAD files
- Updated as-built drawings
- Responsible Engineer to provide construction support

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f. Project Schedule

Burns & McDonnell has included a Planning Schedule which provides an overall/high level view of the schedule for the circuits identified in this RFP. In addition, individual circuit schedules are provided which identify the milestones requested by PG&E in this RFP. These milestones include:

- Notice to Proceed (CWA Issued to BMcD)
- 30% Design Complete/Constructability Review
- Provide PG&E with Structure Check Sheets
- 60% Design Review / Issue Final Scope Package & BOM for PG&E Review
- 95% Design Review/ Issue Final Design Drawings for PG&E Review
- Issue IFC Package for Construction

The proposal project schedules will be finalized once the final scope of work has been issued. The “Complete Construction and As-Built” activities/milestones will be added to the project schedules when the construction schedules are available. The proposal project schedules assume PG&E and BMcD team availability for meetings and three day responses for informational requests.

The Burns & McDonnell Engineering team will work with PG&E to develop the detailed project schedule after the CWA has been approved and will update the Proposal dates as needed at that time.

See “Section 7 - Project Schedules” for the Planning and Milestone schedules.

g. Project Pricing

Burns & McDonnell has provided the pricing on the spreadsheet provided in the RFP as requested by PG&E.

See “Section 8 - Project Pricing”.

General

BMcD is prepared to perform work for the Group Waves 14-20 or any combination of projects, based upon award from PG&E. From the work performed and lessons learned during the NERC Priority I Mitigation phase and NERC Priority II Mitigation projects recently completed, we have recognized and incorporated efficiencies in the design process that will be incorporated into the planning and scope development and reduced our costs and schedule durations.

The following assumptions have been applied to our proposal, including:

- As indicated in the PG&E RFP, “Discrepancies” are identified by PG&E as the total number of clearance discrepancies on a given circuit. “Steel Locations” are identified by PG&E as the total

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number of structure locations requiring mitigation on a given circuit. BMcD has based our scope of work, approach, and pricing on the engineering required for the identified 'Steel Locations'.

- Consolidate applicable engineering, walkdowns and reviews for the logical circuit groupings to maximize resource efficiencies for PG&E and BMcD.
- Utilize teleconference and collaboration tools to facilitate meetings for projects with minimal discrepancies (five or less) instead of face-to-face meetings with travel.
- New Structure Design will include design activities related to tubular steel or wood structure types, excluding lattice steel structure types.
- Consistent with Priority I and other Priority II wood pole work, it is our understanding the PG&E RMC will complete any wood pole design.
- Any Change Requests (CRs) will be estimated, based on the defined scope of work and schedule, and priced using our standard Rate Sheet, as defined in our current MSA (4400004292).

Group Wave 14

We have included the following project specific Scope of Work and Assumptions for the projects in Group Wave 14.

Group Wave #	Proj Title #	Circuit Name	PGE Job Order #	Circuit #	Mileage	# Spans	Discrepancies	Steel Locations	Tentative IFC Date	Shared Circuit Name
14	W14-1	Caribou-Table Mountain 230kV	30951931	20013	54.4	351	30	20	10/1/2014	Paradise-Table Mountain 115kV
	W14-2	Paradise-Table Mountain 115kV	30970621	10400	33.7	258	44	25	10/1/2014	Paradise-Butte 115kV, Caribou-Palermo 115kV, Caribou-Table Mountain 230kV
	W14-3	Caribou-Palermo 115kV	30898386	10391	54.2	455	127	65	10/1/2014	Paradise-Table Mountain 115kV
	W14-4	Palermo-Wyandotte 115kV	30977380	10385	5.3	40	3	3	6/1/2014	Palermo-Oroville #2 60kV
Wave 14 Totals					147.6	1104	204	113		

The following PG&E tower types and top cage extensions have been modeled for previous projects and will be used for the projects included in Group Wave 14: 4G, 3N-D.E., G94-D.E., BA, BB, SIERRA-STD, K, and B.

The following PG&E tower types and top cage extensions will need to be modeled to be used for the projects included in Group Wave 14: 2FB-D.E., 3FA, 3FB, 3FBX, and 2AS. It is assumed that one basic tower of each type will be modeled as well as one top cage extension for each tower type will be modeled/designed.

Burns & McDonnell has performed preliminary over-tension analyses for the circuits in this RFP. This preliminary analysis has only identified the sections of the affected circuits. A final detailed over-tension analysis will be completed as part of our engineering services and is included in our pricing, the results of which will be reported and presented to PG&E, in the format of PG&E's choosing, for further consideration. The results of our preliminary analyses are listed by circuit below.

Caribou-Table Mountain 230kV

- Raise/replace one (1) FB-D.E. tower, five (5) 3FA towers, three (3) 3FB towers, two (2) 3FBX towers, two (2) 4G towers, one (1) 3N tower, one (1) G94-D.E. tower, four (4) BA towers, and one

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(1) BB tower at Structures 008/061, 009/074, 010/079, 015/111, 024/180, 030/214, 030/216, 032/233, 034/250, 041/305, 043/315, 046/335, 047/340, 050/356, 051/366, 054/382, 056/391, 057/394, 058/397, and 059/402.

- ***Based on preliminary analysis, NERC affected sections with existing over-tension issues: 053/379 – 056/387.***

Paradise-Table Mountain 115kV

- Raise one (1) 2AS tower, one (1) SIERRA-STD tower, and one (1) BA tower at Structures 014/115, 13/113, and 060/410.
- Raise existing towers/replace h-frames at twenty-two (22) locations at Structures 024/183, 024/180, 022/176, 018/146, 12/109, 12/103, 12/100, 11/094, 11/093, 10/089, 10/087, 10/085, 10/084, 09/079, 09/076B, 09/075, 08/070, 08/068, 07/065, 07/062, 06/058, and 062/414.
- ***Based on preliminary analysis, NERC affected sections with existing over-tension issues: 006/062 – 025/196. A complete analysis will be performed in compliance with “Overhead Transmission Line Design Criteria – 068177” during the scope of engineering services.***

Caribou-Palermo 115kV

- Raise/replace sixty (65) unknown towers at Structures :00/001, :00/006, :03/002, :03/029, :05/040, :05/041, :06/051, :08/066, :09/075, :09/077, :10/084, :10/085, :11/090, :11/091, :12/097, :13/105, :13/109, :13/110A, :14/116, :15/125, :16/128, :16/131, :16/133, :16/136, :17/139, :18/151, :18/154, :21/178, :23/190, :23/191, :23/196, :24/198, :24/202, :24/204, :25/207, :25/211, :28/228, :31/255, :31/256A, :31/257, :33/267, :34/274, :34/279, :35/282, :35/383, :35/286, :36/295, :37/298, :14/115, 013/112, 012/105, 012/101, 011/099, 010/092, 010/088, 010/085, 009/079A, 008/070, 008/069, 006/053, 005/046, 003/036, 003/033, 002/022, and 002/020.
- There are sixty locations with unknown structure types on the Caribou-Palermo 115kV circuit.
- ***Based on preliminary analysis, NERC affected sections with existing over-tension issues: 014/116 – 008/070 and 008/066 – 01/012. A complete analysis will be performed in compliance with “Overhead Transmission Line Design Criteria – 068177” during the scope of engineering services.***

Palermo-Wyandotte 115kV

- Raise one (1) B tower and one (1) K tower at Structures 001/011 and 003/027.
- Add intersct structure near Structure 003/025.
- ***Based on preliminary analysis, there are no NERC affected sections with existing over-tension issues. A complete analysis will be performed in compliance with “Overhead Transmission Line Design Criteria – 068177” during the scope of engineering services.***

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Group Wave 15

We have included the following project specific Scope of Work and Assumptions for the projects in Group Wave 15.

Group Wave #	Proj Title #	Circuit Name	PGE Job Order #	Circuit #	Mileage	# Spans	Discrepancies	Steel Locations	Tentative IFC Date	Shared Circuit Name
15	W15-1	El Dorado-Missouri Flat #1 115kV	30940862	10067	14.4	129	8	6	9/2/2014	El Dorado-Missouri Flat #2 115kV
	W15-2	Rio Oso-Nicolaus 115kV	30932676	10278	5.4	39	22	13	6/28/2014	Palermo-Nicolaus 115kV, Bogue-Rio Oso
Wave 15 Totals					19.8	168	30	19		

The following PG&E tower types and top/waist cage extensions have been modeled for previous projects and will be used for the projects included in Group Wave 15: A, B, and SIERRA-STD.

No additional tower types or top/waist cage extensions will need to be modeled/designed to be used for the projects included in Group Wave 15.

Burns & McDonnell has performed preliminary over-tension analyses for the circuits in this RFP. This preliminary analysis has only identified the sections of the affected circuits. A final detailed over-tension analysis will be completed as part of our engineering services and is included in our pricing, the results of which will be reported and presented to PG&E, in the format of PG&E's choosing, for further consideration. The results of our preliminary analyses are listed by circuit below.

El Dorado-Missouri Flat #1 115kV

- Raise five (5) SIERRA-STD towers at Structures 002/015, 002/022, 004/030, 006/043, and 006/048.
- Replace steel pole 2ANS at Structure 012/114.
- *Based on preliminary analysis, NERC affected sections with existing over-tension issues: 001/014 – 002/018 and 004/028 - 004/031. A complete analysis will be performed in compliance with "Overhead Transmission Line Design Criteria – 068177" during the scope of engineering services.*

Rio Oso-Nicholas 115kV

- Raise eleven (11) A towers at Structures 043/328, 043/326, 042/324, 042/322, 042/320, 041/318, 041/316, 040/314, 040/311, 040/306D, and 040/306F.
- Raise two (2) B towers at Structures 040/308 and 40/306B.
- *Based on preliminary analysis, there are no NERC affected sections with existing over-tension issues. A complete analysis will be performed in compliance with "Overhead Transmission Line Design Criteria – 068177" during the scope of engineering services.*

Project Management Plan & Project Specific Clarifications

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Group Wave 16

We have included the following project specific Scope of Work and Assumptions for the projects in Group Wave 16.

Group Wave #	Proj Title #	Circuit Name	PGE Job Order #	Circuit #	Mileage	# Spans	Discrepancies	Steel Locations	Tentative IFC Date	Shared Circuit Name
16	W16-1	Eagle Rock-Cortina 115kV	30932643	10061	43.5	326	30	11	6/1/2014	Eagle Rock-Redbud 115kV, Cortina-
	W16-2	Eagle Rock-Redbud 115kV	30932644	10062	23.5	231	10	1	6/1/2014	Eagle Rock-Cortina 115kV
	W16-3	Ignacio-Mare Island #1 115kV	30901383	10107	39.5	258	33	22	7/1/2014	Ignacio-Mare Island #2 115kV
	W16-4	Ignacio-Mare Island #2 115kV	30901383	10108	43.3	282	57	26	7/1/2014	Ignacio-Mare Island #1 115kV, Vaca-
	W16-5	Ignacio-San Rafael #1 115kV	30901384	10109	11.5	70	7	7	6/1/2014	Ignacio-Alto 60kV
Wave 16 Totals					161.3	1167	132	62		

The following PG&E tower types and top/waist cage extensions have been modeled for previous projects and will be used for the projects included in Group Wave 16: AH, A, B, and X.

The following PG&E tower types and top/waist cage extensions will need to be modeled to be used for the projects included in Group Wave 16: 2DS, 2ASX, 2BS, 2AS, and C-D.E. Four unknown tower types. It is assumed that One basic tower of each type will be modeled as well as one extension for each tower type will be modeled/designed.

Burns & McDonnell has performed preliminary over-tension analyses for the circuits in this RFP. This preliminary analysis has only identified the sections of the affected circuits. A final detailed over-tension analysis will be completed as part of our engineering services and is included in our pricing, the results of which will be reported and presented to PG&E, in the format of PG&E's choosing, for further consideration. The results of our preliminary analyses are listed by circuit below.

Eagle Rock-Cortina 115kV

- Raise one (1) 2DS tower, five (5) 2ASX towers, two (2) 2BS towers, and three (3) 2AS towers at Structures 00/001, 02/014, 04/023, 04/024, 06/035, 07/041, 014/068, 008/045, 001/011, 000/004, and 000/003.
- Remove boulder in Span 14/009 to 14/010.
- ***Based on preliminary analysis, there are no NERC affected sections with existing over-tension issues. A complete analysis will be performed in compliance with "Overhead Transmission Line Design Criteria – 068177" during the scope of engineering services.***

Eagle Rock-Red Bud 115kV

- Raise one (1) 2AS tower at Structure :010/059.
- ***Based on preliminary analysis, there are no NERC affected sections with existing over-tension issues. A complete analysis will be performed in compliance with "Overhead Transmission Line Design Criteria – 068177" during the scope of engineering services.***

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(continued)



Ignacio-Mare Island #1 115kV

- Raise four (4) AH towers, one (1) C-D.E. tower, six (6) A towers, four (4) B towers, and two (3) X towers at Structures 001/011*, 001/013*, 001/014*, 004/030*, 004/032*, 005/039*, 016/117*, 018/124*, 018/126*, 019/133*, 020/141*, 022/150*, 022/154*, 026/183*, 026/186*, 027/193*, 027/196*, and 033/325*.
- Replace three-way SCADA switch pole at Structure 024/170.
- Replace three (3) steel poles at Structures 027/191A, 029/208, and 033/232.
- *Based on preliminary analysis, NERC affected sections with existing over-tension issues: 000/009* – 002/016*; 004/031* - 023/155*; and 033/232 – 034/237*. A complete analysis will be performed in compliance with “Overhead Transmission Line Design Criteria – 068177” during the scope of engineering services.*

Ignacio-Mare Island #2 115kV

- Raise three (3) AH towers, eleven (11) A towers, four (4) B towers, and seven (7) unknown towers.
- Replace and relocate steel pole on crossing line near Structure 034/241.
- *Based on preliminary analysis, NERC affected sections with existing over-tension issues: 000/009* – 002/016*; 004/031* - 006/045*; 015/110* – 023/158A*; and A33/236* - A33/235*. A complete analysis will be performed in compliance with “Overhead Transmission Line Design Criteria – 068177” during the scope of engineering services.*

Ignacio-San Raphael #1 115kV

- Replace two (2) steel poles at Structures 010/060* and 011/063*.
- *Based on preliminary analysis, there are no NERC affected sections with existing over-tension issues. A complete analysis will be performed in compliance with “Overhead Transmission Line Design Criteria – 068177” during the scope of engineering services.*